

REMARKS

In the first Office Action, claims 20 and 28 were objected to. Applicants have now amended the claims as suggested to include the word "and."

Claim 15 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Specifically, the Examiner has indicated that it is unclear what is meant by the phrase ">820 nm respectively." Claim 15 has now been amended to clarify that the filters comprise 3dB stopbands of the referenced wavelengths. Claim 15 has also been amended to provide proper antecedent basis for "3dB stopbands." The recitation of ">820 nm" is now believed to be clear. It is one of the three filters recited. See the specification at page 4, lines 24-26.

Claims 10 and 13-19 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Levasseur (U.S. 5,903,339) in view of Nakai et al. (U.S. 6,094,281). Levasseur teach an optical scanner for testing the validity of bills which includes a light emitting element 120 and photoelectric sensors 124 and 125. However, Levasseur does not teach or suggest an optical sensor which comprises a light source, a light guide, and a photodetector preceded by an optical filter as claimed.

Nakai et al. teach an image reading device for use in facsimile machines, scanners, copying machines, and the like which includes a photoelectric converting element capable of converting optical signals in the visible and invisible spectral region into electrical signals. The device includes wavelength selecting filters which read the visible optical signals. The Examiner has taken the position that it would have been obvious to one skilled in the art to have added filters and a light guide to the light source and photodetector system of Levasseur in view of Nakai et al. However, Nakai is not believed to teach a light guide as claimed. The Examiner asserts that elements 2' and 3' in Nakai constitute "a light guide." But, Nakai terms these elements "light receiving faces," one for visible light and one for invisible light. There is no disclosure that these elements in fact are, or function as, light guides.

Moreover, claim 10 recites that the "light guide is arranged to operate as both an incident light directing means for directing light from the light source onto the banknote and as a reflected light-directing means for directing light reflected from the banknote to the photodetector via the optical filter." Even if Nakai's elements 2' and 3' could be considered to be a "light guide,"

sensors 2 and 3 of Nakai are not arranged as claimed in claim 10, nor could sensors 2 and 3 function in the manner claimed as both incident light directing means and reflected light directing means. Finally, there is no teaching or suggestion of how or where the Nakai sensors would be positioned in the apparatus of Lavasseur. Claims 10 and 13-19 are patentable over Lavasseur and Nakai et al.

Claims 12, 20 and 28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Lavasseur in view of Nakai et al. and further in view of Yamana et al. (U.S. 5,696,607). Yamana teaches an image reader for use in copiers, scanners, etc. including a light source comprising a plurality of LEDs, a light-guiding transparent board, a concave mirror, a condenser lens and a photoelectric converter. The Examiner has taken the position that it would have been obvious "to have made the light guide of Lavasseur a trapezoid with the wider portion located close to the document." (Action, page 8). However, Lavasseur has no light guide, a point previously conceded by the Examiner. Thus, there can be no suggestion to modify an element completely missing from the primary reference. If the Examiner is proposing to modify sensor 2 and 3 of Nakai to make one or both trapezoidal in shape and then incorporate the modified Nakai sensors into the apparatus of Lavasseur, then applicants submit that such a proposal has several fatal shortcomings.

First, Nakai desires that sensors 2 and 3 sense visible and invisible light, respectively, from a single source. Yamana uses a light source comprising multiple LEDs. There is no teaching or suggestion that the light-guiding board 1 of Yamana would even be operable in the device of Nakai. Second, as discussed above, the sensors 2 and 3 of Nakai are not arranged as claimed, and there is no teaching or suggestion of how or where the Nakai sensors would be positioned in the device of Lavasseur. For all of these reasons, claims 12, 20, and 28 are also patentable.

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For all of the above reasons, applicant submits that claims 10, 12-20 and 28, as amended, are patentable over the cited references. Early notification of allowable subject matter is respectfully requested.

Respectfully submitted,

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